

August 31, 1940.

RADIO:

Publications by the Staff of the National Bureau of Standards.

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General Information

Some of the publications in this list have appeared in the regular series of publications of the Bureau, and others in various scientific and technical journals. Unless specifically stated, papers are not obtainable directly from the National Bureau of Standards.

Where the price is stated, the publications can be purchased from the Superintendent of Documents, Government Printing Office, Washington, D.C. The prices quoted are for delivery by mail to addresses in the United States and its territories and possessions and Canada and Mexico and certain other foreign countries which extend the franking privilege. In the case of all other countries, one-third the cost of the publication should be added to cover postage. Remittances should be made either by coupons (obtainable from the Superintendent of Documents in sets of 20 for \$1.00 and good until used), or by check or money order payable to the "Superintendent of Documents, Government Printing Office" and sent to him with order, or by cash at the sender's risk.

Publications marked "Free" are mimeographed pamphlets obtainable from the National Bureau of Standards without charge.

Publications marked "OP" are out of print, but, in general, may be consulted at technical libraries.

For papers in outside scientific or technical journals, the name of the journal or the organization publishing the article is given in abbreviated form, with the volume number (underscored), page, and year of publication, in the order named. The Bureau can not supply copies of these journals, or reprints from them, and it is unable to furnish information as to their availability or price. They, too, can usually be consulted at technical libraries. Inquiries for copies of such papers should be addressed directly to the publisher of the journal at the address given in list below.

This list includes all publications since Jan. 1, 1924, and also the publications earlier than 1924 issued by the Bureau itself of which copies are still available.

The Bureau does not maintain a mailing list for distribution of its radio publications as issued. Persons who wish to keep in touch with the radio publications of the Bureau as they are issued may subscribe to the "Technical News Bulletin", a monthly pamphlet giving news on the Bureau's scientific and engineering work and announcements of all new publications. Subscriptions should be sent to Superintendent of Documents, Government Printing Office, Washington, D.C. The price is 50 cents per year for subscribers in the United States.

The Journal of Research of the National Bureau of Standards is a monthly publication which contains the Bureau's Research Papers on all subjects. All subscriptions should be sent to Superintendent of Documents, Government Printing Office, Washington, D.C. The price is \$3.50 per year for subscribers in the United States.

All publications of the Bureau on all subjects, including those which are out of print, are listed in Circular C24, "Publications of the National Bureau of Standards", and the supplements thereto. The Circular and the set of supplements can be purchased for 55 cents, from Superintendent of Documents, Government Printing Office, Washington, D.C. Copies may be consulted at technical libraries in the larger cities.

Series letters with serial numbers are used to designate Bureau publications:

S = "Scientific Paper". S1 to S329 are "Reprints" from the "Bulletin of the Bureau of Standards." S330 to S572 were published as "Scientific Papers of the Bureau of Standards". This series was superseded by the "Bureau of Standards Journal of Research" in 1928.

T = "Technologic Paper". T1 to T370. This series was superseded by the "Bureau of Standards Journal of Research" in 1928.

RP= "Research Paper". These are reprints of articles appearing in the "Bureau of Standards Journal of Research" and in the "Journal of Research of the National Bureau of Standards", the latter being the title of this periodical since July 1934 (Volume 13, number 1).

C = "Circular".

H = "Handbook".

M = "Miscellaneous Publication".

LC= "Letter Circular", a mimeographed pamphlet obtainable from the National Bureau of Standards without charge.

The underlined topics used as center-headings below are not the names of publications. They are general subjects given merely for convenience of classification of the various publications. The numbers under these topics are classification numbers according to the decimal classification system; and are not numbers by which any publications are known or ordered. A complete description of the classification system is given in Bureau Circular No. 385, "Classification of Radio Subjects; An Extension of the

Dewey Decimal System," now out of print, but available for consultation in technical libraries; it was reprinted in Proceedings of the Institute of Radio Engineers 18, 1433 (1930).

Addresses of Publishers of Journals

Aeronautical World, 1709 W. 8th St., Los Angeles, Calif.
The American Yearbook, The MacMillan Co., New York City.
Annals of the American Academy of Political and Social Science, 3457 Walnut St., Philadelphia, Pa.
Bulletin of the National Research Council, National Academy of Sciences, Washington, D.C.
Bulletin of the American Meteorological Society, Blue Hills Observatory, Harvard University, Milton, Mass.
Electrical World, 330 W. 42nd St., New York City.
Electronics, McGraw-Hill Bldg., 330 West 42nd St., New York City.
The Engineering Foundation, 29 West 39th St., New York City.
Engineers and Engineering, 124 W. Polk St., Chicago, Ill.
Jahrbuch d. drahtlosen Telegraphie, M. Krayn, Genthiner Strasse, 32, Berlin, Germany.
Journal of the Aeronautical Sciences, 5341 RCA Bldg., Rockefeller Center, New York City.
Journal of the Franklin Institute, Franklin Institute of the State of Pennsylvania, Philadelphia, Pa.
Journal of the Optical Society of America and Review of Scientific Instruments, American Institute of Physics, 11 E. 38th St., New York City.
Journal of the Washington Academy of Sciences, Washington Academy of Sciences, Washington, D.C.
Journal of the Western Society of Engineers, 205 W. Wacker Drive, Chicago, Ill.
Mechanical Engineering, 29 W. 39th St., New York City.
National Aeronautic Association Review, 1909 Mass. Ave., N.W., Washington, D.C.
Nature, MacMillan Co. Ltd., St. Martin St., London, W.C.2, England.
L'Onde Electrique, La Société des Amis de la TSF, Paris, France.
Papers of the General Assembly held in Washington, International Scientific Radio Union; International Scientific Radio Union, Brussels, Belgium.
Papers of the International Civil Aeronautics Conference, Superintendent of Documents, Government Printing Office, Washington, D.C.
Papers of the Seventeenth Annual Safety Congress, National Safety Council, Chicago, Ill.
Physical Review, American Institute of Physics, 11 E. 38th St., New York City.
Proceedings of the Institute of Radio Engineers, 330 West 42nd St., New York City.

Proceedings of the National Academy of Sciences, National Academy of Sciences, Washington, D.C.

Proceedings of the Third Pan-Pacific Science Congress, National Research Council of Japan, Tokyo, Japan.

QST, American Radio Relay League, West Hartford, Conn.

Radio, 1300 Kenwood, Santa Barbara, Calif.

Radio Engineering, Bryant Publishing Co., 19 E. 47th St., New York City.

Radio News, Ziff-Davis Pub. Co., 608 So. Dearborn St., Chicago, Ill.

Science, The Science Press, Grand Central Terminal, New York City.

Scientific American, 24 West 40th St., New York City.

Terrestrial Magnetism and Atmospheric Electricity, Johns Hopkins Press, Baltimore, Md.

Transactions American Geophysical Union, Twelfth Annual Meeting, National Academy of Sciences, Washington, D.C.

Radio (General)
(R000)

<u>Title</u>	<u>Series</u>	<u>Price</u>
The principles underlying radio communication. 2nd ed., 1922. Signal Corps Radio Communication Pamphlet No. 40. (Textbook, 619 pages, with 300 illustrations, covering radio principles and practice).		\$1.00
Classification of radio subjects, an extension of the Dewey Decimal System. (1930). Also published in Proc.I.R.E. 18, 1433-1456 (1930).	C385	OP
Electrical interference with radio reception. (1937).	LC491	Free
Sources of radio information. (1939).	LC578	Free
Radio communication, review for year. J. H. Dellinger. The American Yearbook, 1925, 1926, 1927, 1928, 1929.		

Laws; Regulations
(R007)

Engineering aspects of the work of the Federal Radio Commission. J. H. Dellinger. Proc.I.R.E. 17, 1326-1333 (1929).
Radio broadcasting regulation and legislation. J. H. Dellinger. Proc.I.R.E. 17, 2006-2010 (1929).

Radio Research
(R010)

<u>Title</u>	<u>Series</u>	<u>Price</u>
Survey of current progress in radio engineering. J. H. Dellinger. J. Western Soc. Engineers <u>30</u> , 39-49 (1925).		
The International Union of Scientific Radio Telegraphy. J. H. Dellinger. Science <u>64</u> , 638-639 (1926).		
The International Union of Scientific Radio Telegraphy. J. H. Dellinger. Proc.I.R.E. <u>16</u> , 1107-1112 (1928).		
Some contributions of radio to other sciences. J. H. Dellinger. J. Franklin Institute <u>228</u> , 11-42 (1939).		

Radio Wave Transmission Phenomena (General)
(R113)

A statistical study of conditions affecting the distance range of radio telephone broadcasting stations. C. M. Jansky, Jr. Tech.Pap.BS <u>19</u> , 641-650 (1925)	T297	OP
Some studies of radio transmission over long paths made on the Byrd Antarctic Expedition. L. V. Berkner. BS J. Research <u>8</u> , 265-272 (1932).	RP412	10c
Bi-monthly reports, Receiving measurements and atmospheric disturbances at the Bureau of Standards. L. W. Austin. Proc.I.R.E. <u>10</u> , 239, 315, 421 (1922); <u>11</u> , 3, 83, 187, 333, 579 (1923); <u>12</u> , 3, 113, 227 (1924).		
Field intensity measurements in Washington on the Radio Corporation stations at New Brunswick and Tuckerton, N.J. L. W. Austin. Proc.I.R.E. <u>12</u> , 681-692 (1924).		
Some transpacific radio field intensity measurements. L. W. Austin. Proc.I.R.E. <u>13</u> , 151-157 (1925). J. Washington Acad. Sciences <u>15</u> , 139-143 (1925).		
Facts and fallacies of radio wave transmission. J. H. Dellinger. Radio News <u>7</u> , 1139, 1190, 1192, 1194 (1926).		
Application of radio transmission phenomena to the problems of atmospheric electricity. J. H. Dellinger. J. Wash. Acad. Sciences <u>16</u> , 162-167 (1926).		
Apparatus for recording radio phenomena. T. Parkinson. Bul. Nat. Research Council, No. 61, 183-191 (1927).		

Radio Wave Transmission Phenomena (General) (continued)

<u>Title</u>	<u>Series</u>	<u>Price</u>
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Summary of symposium on correlations of various radio phenomena with solar and terrestrial magnetic and electric activities. J. H. Dellinger. Bul. Nat. Research Council, No. 61, 192-197 (1927).

Report of the Chairman of the Commission of Radio Wave Propagation. International Union of Scientific Radio Telegraphy. L. W. Austin. Proc. I.R.E. 16, 348-358 (1928).

Bibliography on radio wave phenomena and measurement of radio field intensity. Proc. I.R.E. 19, 1034-1089 (1931).

Note on reception of radio broadcast stations at distances exceeding 12,000 km. L. V. Berkner. Proc. I.R.E. 20, 1324-1327 (1932).

Report of Committee on Radio Wave Propagation. J. H. Dellinger (co-author). Proc. I.R.E. 26, 1193-1234 (1938).

Report of Commission II - Radio wave propagation, International Scientific Radio Union. J. H. Dellinger. Proc. I.R.E. 27, 645-649 (1939).

The role of the ionosphere in radio wave propagation. J. H. Dellinger. AIEE Trans. 58, 803-822 (1939).

Radio progress during 1938 - Wave propagation. J. H. Dellinger. (Co-author). Proc. I.R.E. 27, 180-183 (1939).

Radio progress during 1939 - Wave propagation. J. H. Dellinger. (Co-author). Proc. I.R.E. 28, 108-112 (1940).

Fading
(R113.1)

Cooperative measurements of radio fading in 1925.

J. H. Dellinger, C. B. Jolliffe, and T. Parkinson. Sci. Pap. BS 22, 419-449 (1927).

\$561 OP

Some observations of short-period radio fading.

T. Parkinson. BS J. Research 2, 1057-1075 (1929). RP70 OP
Also published in Proc. I.R.E. 17, 1042-1061 (1929).

A radio method for synchronizing recording apparatus.

T. Parkinson and T. R. Gilliland. BS J. Research 6, 195-198 (1931).

RP269 10c

Also published in Proc. I.R.E. 19, 335-340 (1931).

Fading (continued)

Radio signal fading phenomena. J. H. Dellinger and L. E. Whittemore. J. Wash. Acad. Sciences 2, 245-259 (1921). Jahrbuch d. drahtlosen Telegraphie 24, 66-70 (1924).

Concerning the nature of fading. J. H. Dellinger. Radio News 7, 270, 390 (1925).

Results of cooperative measurements of radio fading. J. H. Dellinger, C. B. Jolliffe, and T. Parkinson. Radio News 8, 146 (1926).

Daily and Seasonal Variations
(R13.2)

Long-distance radio receiving measurements at the Bureau of Standards in 1923. L. W. Austin. Proc.I.R.E. 12, 389-394 (1924).

Long-distance receiving measurements in 1924. L. W. Austin. Proc.I.R.E. 13, 283-290 (1925). J. Wash. Acad. Sciences 15, 227-234 (1925).

Long-distance radio receiving measurements and atmospheric disturbances at the Bureau of Standards in 1925. L. W. Austin. Proc.I.R.E. 14, 663-673 (1926).

Long wave radio measurements at the Bureau of Standards in 1926, with some comparisons of solar activity and radio phenomena. L. W. Austin. Proc.I.R.E. 15, 825-836 (1927).

Long wave radio receiving measurements at the Bureau of Standards in 1927. L. W. Austin. Proc.I.R.E. 16, 1252-1257 (1928).

Long wave radio receiving measurements at the Bureau of Standards in 1928. L. W. Austin. Proc.I.R.E. 18, 101-105 (1930).

Long wave radio receiving measurements at the Bureau of Standards in 1929. L. W. Austin. Proc.I.R.E. 18, 1481-1487 (1930).

Long wave radio receiving measurements at the Bureau of Standards in 1930. L. W. Austin. Proc.I.R.E. 19, 1767-1772 (1931).

A method of representing radio wave propagation conditions. L. W. Austin. Proc.I.R.E. 19, 1615-1617 (1931).

Daily and Seasonal Variations (continued)TitleSeries Price

Tables of North Atlantic radio transmission conditions for long wave length daylight signals for the years 1922 to 1930.
L. W. Austin. Proc.I.R.E. 20, 689-698 (1932).

Low-frequency radio receiving measurements at the Bureau of Standards in 1931 and 1932. E. B. Judson. Proc.I.R.E. 21, 1354-1363 (1933).

Direction Variations
(R113.3. See also R325.31, R526.1, and R526.2)

A suggestion for experiments on apparent radio direction variations.
L. W. Austin. Proc.I.R.E. 13, 3-4 (1925).

A new phenomenon in sunset radio direction variations. L. W. Austin.
J. Wash. Acad. Sciences 15, No. 14, 317-319 (1925).
Proc.I.R.E. 13, 409-412 (1925).

Apparent night variations with crossed-coil radio beacons.
H. Pratt. Proc.I.R.E. 16, 652-657 (1928).

Meteorological, Geophysical, and Cosmic Effects
(R113.5)

Comparison of data on the ionosphere, sunspots and terrestrial magnetism. E. B. Judson. J. Research NBS 17, 323-330 (1936).
Also published in Proc.I.R.E. 25, 38-46 (1937). RF913 5c

Sudden disturbances of the ionosphere. J. H. Delling. J. Research NBS 19, 111-149 (1937).
Also published in Proc.I.R.E. 25, 1253-1290 (1937). RF1016 15c

Radio signal strength and temperature. L. W. Austin and I. J. Wymore. Proc.I.R.E. 14, 781-784 (1926).

The relations between radio and other natural phenomena. L. W. Austin. Proc. of the Third Pan-Pacific Science Congress 2, 1257-1263 (1926).

On the influence of solar activity on radio transmission. L. W. Austin and I. J. Wymore. Proc.I.R.E. 16, 166-173 (1928).

The relation of radio propagation to disturbances in terrestrial magnetism. I. J. Wymore. Proc.I.R.E. 17, 1206-1213 (1929).

Meteorological, Geophysical, and Cosmic Effects (continued)

Note on a comparison of sunspot numbers, terrestrial magnetic activity, and long wave radio signal strength. L. W. Austin. J. Wash. Acad. Sciences 20, 73-74 (1930).

Solar and magnetic activity and radio transmissions. L. W. Austin, E. B. Judson, and I. J. Wymore-Shiel. Proc. I.R.E. 18, 1997-2002 (1930).

Solar activity and radiotelegraphy. L. W. Austin. Proc. I.R.E. 20, 280-285 (1932).

Observations on long-delay radio echoes. J. H. Dellinger. QST 18, pp. 42, 88 of August (1934).

The ionosphere, sunspots and magnetic storms. S. S. Kirby, T. R. Gilliland, E.B.Judson, and N.Smith. Phys. Rev. 48, 849 (1935).

A new cosmic phenomenon. J.H.Dellinger. Science 82, 351 (1935).

A new radio transmission phenomenon. J.H.Dellinger. Phys. Rev. 48, 705 (1935).

A new radio transmission phenomena. J. H. Dellinger. QST 19, pp. 21, 29 of Dec. 1935.

Confirmation of cosmic phenomenon. J. H. Dellinger. Science 82, 548-549 (1935).

The ionosphere, solar eclipses, and magnetic storms. S.S.Kirby, T.R.Gilliland, N.Smith, and S.E.Reymer. Phys. Rev. 50, 258-259 (1936).

A new solar radio disturbance. J.H.Dellinger. Electronics 9, pp. 25, 34 of Jan. (1936).

New cosmic phenomena. J.H.Dellinger. QST 20, pp. 8, 79 of Jan. (1936)

High-frequency fadeouts continue. J.H.Dellinger. QST 20, p. 37 of June (1936).

Direct effects of particular solar eruptions on terrestrial phenomena. J.H.Dellinger. Phys. Rev. 50, 1189 (1936).

Ionosphere and magnetic storms. S.S.Kirby, N.Smith, T.R.Gilliland, and S.E.Reymer. Phys. Rev. 51, 992-993 (1937).

Radio fadeouts through 1936. J.H.Dellinger. QST 21, pp. 35, 86, 88 of Feb. (1937).

Meteorological, Geophysical, and Cosmic Effects (continued)

	<u>Title</u>	<u>Series</u>	<u>Price</u>
Sudden ionospheric disturbances.	J.H.Dellinger. Ter. Mag. & Atmos. Elec. <u>42</u> , 49-53 (1937).		
Sudden disturbances of the ionosphere.	J.H.Dellinger. J.Applied Physics <u>8</u> , 732 (1937).		
Remark on S. Chapman's "Note on radio fadeouts and the associated magnetic disturbances".	S.S.Kirby. Ter.Mag.& Atmos.Elec. <u>42</u> , 420 (1937).		
Discussion of S. Chapman's "Note on radio fadeouts and associated magnetic disturbances".	J.H.Dellinger. Ter.Mag.& Atmos. Elec. <u>43</u> , 179 (1938).		
The nature of the ionosphere storm.	S.S.Kirby, N.Smith, T.R. Gilliland. Phys.Rev. <u>54</u> , 234 (1938).		
The sun and the ionosphere.	J.H.Dellinger. Fifth Report of Commission on Solar and Terrestrial Relationships, p.72 (1939).		
<u>Eclipses</u> (RL13.55)			
Radio observations of the Bureau of Standards during the solar eclipse of August 31, 1932.	S.S.Kirby, L.V.Berkner, T.R.Gilliland, and K.A.Norton. BS J.Research <u>11</u> , 829-845 (1933).	RP629	5c
Also published in Proc.I.R.E. <u>22</u> , 247-264 (1934).			
Ionosphere studies during partial solar eclipse of Feb. 3, 1935.	S.S.Kirby, T.R.Gilliland, and E.B. Judson. J.Research NBS <u>16</u> , 213-225 (1936).	RP868	5c
Also published in Proc.I.R.E. <u>24</u> , 1027-1040 (1936).			
Predictions of normal radio critical frequencies related to solar eclipses in 1940.	N.Smith. J. Research NBS <u>24</u> , 225-228 (1940).	RP1279	5c
Observations radiotelegraphiques pendant l'eclipse du soleil du 10 septembre, 1923. (Radio observations during the eclipse of the sun, Sept. 10, 1923).	L. W. Austin. L'Onde Electrique <u>2</u> , 591-594 (1924).		

Ionosphere
(R113.61)

<u>Title</u>	<u>Series</u>	<u>Price</u>
Kennelly-Heaviside layer height observations for 4045 and 8650 kc. T.R.Gilliland. BS J. Research 5, 1057-1061 (1930). Also published in Proc.I.R.E. 12, 114-119 (1931).	RP246	10c
Preliminary note on an automatic recorder giving a continuous height record of the Kennelly-Heaviside layer. T.R.Gilliland and G.W. Kenrick. BS J. Research 7, 783-790 (1931). Also published in Proc.I.R.E. 20, 540-547 (1932).	RP373	10c
Investigations of Kennelly-Heaviside layer heights for frequencies between 1600 and 8650 kc per second. T.R.Gilliland, G.W.Kenrick, and K.A. Norton. BS J. Research 7, 1083-1104 (1931). Also published in Proc.I.R.E. 20, 286-309 (1932).	RP390	10c
Continuous measurements of the virtual heights of the ionosphere. T.R.Gilliland, BS J. Research 11, 141-146 (1933). Also published in Proc.I.R.E. 21, 1463-1475 (1933).	RP582	5c
Note on a multifrequency automatic recorder of ionosphere heights. T.R.Gilliland. BS J. Research 11, 561-566 (1933). Also published in Proc.I.R.E. 22, 236-246 (1934).	RP608	5c
Studies of the ionosphere and their application to radio transmission. S.S.Kirby, L.V.Berkner, and D.M.Stuart. BS J. Research 12, 15-51 (1934). Also published in Proc.I.R.E. 22, 481-521 (1934).	RP632	OP
Multifrequency ionosphere recording and its significance. T.R. Gilliland. J.Research NBS 14, 283-303 (1935). Also published in Proc.I.R.E. 23, 1076-1101 (1935).	RP769	5c
Recent studies of the ionosphere. S.S.Kirby and E.B. Judson. J.Research NBS 14, 469-486 (1935). Also published in Proc.I.R.E. 23, 733-751 (1935).	RP780	5c

Ionosphere (continued)

<u>Title</u>	<u>Series</u>	<u>Price</u>
Characteristics of the ionosphere and their application to radio transmission. T.R.Gilliland, S.S.Kirby, S.E.Reymer and N.Smith. J. Research NBS <u>18</u> , 645-667 (1937). Also published in Proc.I.R.E. <u>25</u> , 823-840 (1937).	RP1001	10c
Maximum usable frequencies for radio sky-wave transmission, 1933 to 1937. T.R.Gilliland, S.S. Kirby, N.Smith, and S.E.Reymer. J.Research NBS <u>20</u> , 627-639 (1938). Also published in Proc.I.R.E. <u>26</u> , 1347-1350 (1938).	RP1096	5c
Application of vertical-incidence ionosphere measurements to oblique-incidence radio transmissions. N.Smith. J.Research NBS <u>20</u> , 683-705 (1938).	RP1100	10c
Trends of characteristics of the ionosphere for half a sunspot cycle. N.Smith, T.R.Gilliland, and S.S.Kirby. J.Research NBS <u>21</u> , 835-845 (1938).	RP1159	5c
The ionosphere and radio transmission conditions, with special reference to the observing and reporting service of the National Bureau of Standards. (1939). Republished in QST <u>24</u> , p.32 of March (1940); and in T. & R. Bull. <u>16</u> , 4 (1940).	LC575	Free
Kennelly-Heaviside layer studies. P.A.DeMars, T.R.Gilliland, and G.W.Kenrick. Proc.I.R.E. <u>20</u> , 106-113 (1931).		
Ionospheric investigations. T.R.Gilliland. Nature (London) <u>134</u> , 379 (1934).		
Averages of critical frequencies and virtual heights of the ionosphere observed by the National Bureau of Standards, Washington, D.C., 1934-1936. T.R.Gilliland, S.S.Kirby, N.Smith, and S.E.Reymer. Ter.Mag. & Atmos.Elec. <u>41</u> , 379-388 (1936).		
Averages of critical frequencies and virtual heights of the ionosphere observed by the National Bureau of Standards, Washington, D.C. Published quarterly in Ter. Mag. & Atmos. Elec., starting with the March 1937 issue.		

Ionosphere (continued)

<u>Title</u>	<u>Series</u>	<u>Price</u>
Critical frequencies of low ionosphere layers. N.Smith and S.S. Kirby. Phys.Rev. <u>51</u> , 890-891 (1937).		
Characteristics of the ionosphere at Washington, D.C., Jan. to May 1937. T.R.Gilliland, S.S.Kirby, N.Smith, and S.E. Reymer. Proc.I.R.E. <u>25</u> , 1174-1184 (1937).		
Characteristics of the ionosphere at Washington, D.C. — Published each month in Proc.I.R.E., starting with the Sept. 1937 issue.		
Averages of critical frequencies and virtual heights of the ionosphere observed by the National Bureau of Standards, Washington, D.C., Sept. and Oct., 1937. Ter.Mag. & Atmos. Elec. <u>42</u> , 408-411 (1937).		
Oblique-incidence ionosphere data and the Lorentz polarization term. N.Smith. Trans.Amer.Geophysical Union, 20th Annual Meeting, p.375 (1939).		
Predictions of useful distances for amateur communication. N.Smith and S.S.Kirby. QST <u>24</u> , pp.26-27 of Sept.(1940).		
<u>Transmission Formulas; Distance Range</u> (R113.7. See also R113, R120).		
Radio field intensity measurements at frequencies from 285 to 5400 kilocycles per second. S.S.Kirby and K.A.Norton. BS J. Research <u>8</u> , 463-479 (1932). Also published in Proc.I.R.E. <u>20</u> , 841-862 (1932).	RP429	5c
Distance ranges of radio waves. (1932).	LC317	Free
An analysis of continuous records of field intensity at broadcast frequencies. K.A.Norton, S.S.Kirby, and G.H.Lester. J.Research NBS <u>13</u> , 897-910 (1934). Also published in Proc.I.R.E. <u>23</u> , 1183-1200 (1935)	RP752	5c
Extension of normal-incidence ionosphere measurements to oblique-incidence radio transmission. N.Smith. J.Research NBS <u>19</u> , 89-94 (1937).	RP1013	5c

Transmission Formulas; Distance Range (continued)

<u>Title</u>	<u>Series</u>	<u>Price</u>
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Application of graphs of maximum usable frequencies to communication problems. N. Smith, S.S. Kirby, T.R. Gilliland. J. Research NBS 22, 81-92 (1939). RP1167 5c

Preliminary note on proposed changes in the constants of the Austin-Cohen transmission formula. L.W. Austin. Proc. I.R.E. 14, 377-380 (1926).

Propagation of waves of 150 to 2000 kilocycles per second (2000 to 150 meters) at distances between 50 and 2000 kilometers. B. van der Pol, T.L. Eckersley, J.H. Dellinger, and P. LeCorbeiller. Proc. I.R.E. 21, 996-1001 (1933).

Report of Committee on Radio Propagation Data. J.H. Dellinger, S.S. Kirby, and others. Proc. I.R.E. 21, 1419-1438 (1933).

Skip distance calculation. N. Smith. QST 21, 47-48 of May (1937).

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W.S.Hinman Jr. BS J.Research 11, 733-741 (1933). RP621 OP

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